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10/615,433

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David Reed

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EXAMINER

NEGRON, ISMAEL

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 08/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,433

Applicant(s)

REED, DAVID

Examiner

Ismael Negron

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-26, 30-33 and 35-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 9-26, 30-33, 35 and 38-47 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 36, 37 and 48-51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on June 1, 2005 has been entered. Claims 1-4, 6-14, 17, 19-22, 24-26, 30-33, 35-44, 46 and 47 have been amended. Claims 5, 27-29 and 34 have been cancelled. Claims 48-51 have been added. Claims 1-4, 6-26, 30-33 and 35-51 are still pending in this application, with claims 1, 21 and 31 being independent.

Title

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Illumination Device Having Rotatable Acrylic Rod, and Method.

Claim Objections

3. Claim 1 is objected to because of the following informalities: it recites the limitation "*a direction of radiation of light*" in line 4, however, there is no previous mention of any radiation of light being produced, received or emitted by the claimed invention.

The cited lack of clarity instances do not amount to indefinitiveness under 35 U.S.C. 112, second paragraph, since it is readily apparent that the claims are referring to the light produced by the light emitting diodes (LEDs) and modified/outputted by the claimed rotatable acrylic rod. The applicant is respectfully advised that the claim must first define the light sources (e.g. the LED), the modifier (e.g. the rotatable acrylic rod) and then (emphasis added) start to recite the desired function or effect of the rotatable rod. Correction is required.

4. Claims 48 and 49 are objected to under 37 CFR 1.75 as being a substantial duplicates of claims 7 and 8 (respectively). When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). In this case, once the length (as in claims 7 and 48) or diameter (as in claims 8 and 49) of the rotatable acrylic rod is defined as proportional to one of a desired wavelength or frequency of light, it becomes necessarily also proportional to the other of the desired wavelength or frequency of light.

5. Claims 50 and 51 are objected to under 37 CFR 1.75 as being a substantial duplicates of claims 36 and 37 (respectively). See previous section 4, where claims 48 and 19 were objected for the same reasons.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-4, 6-20, 48 and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite as the meaning of the phrase "*the rotatable acrylic rod to rotate to change a direction of radiation of light*" (lines 3 and 4) could not be ascertain. It is unclear is it was the intention of the applicant to claim the rotatable rod as being capable of rotation for changing the direction of the light output, the rod actually rotating, or structure enabling such rotation.

The applicant is advised that recitations directed to given abilities of the claimed structure carry little patentable weight. It has been held by the courts that recitations that claim an element as "adapted" or "capable" to perform a function or serve in a given application are not positive limitations, but only require the ability to so perform. *In re Hutchinson*, 69 USPQ 138.

Claims 2-4, 6-20, 48 and 49 are rejected for being dependent on Claim 1.

7. Claims 11-13,19, 40-42 and 46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 is indefinite as it is not clear if the limitation "*a circular cylindrical cross-section of the rotatable rod*" defines a new, circular rod, or if it refers back to the previously recited rod, defined in Claim 1 (line 2). The Applicant is advised that for Prior Art rejections the Examiner assumed the reflective strip to be part of the rod defined in Claim 1. If the Examiner's assumption is correct, Claim 11 (lines 2-4) must be amended to read "*the rotatable rod being cylindrical; the reflective strip encompasses one hundred eight degrees of a the diameter of ~~a circular cylindrical cross-section of the~~ rotatable acrylic rod.*"

Claims 12, 13 and 40-42 are rejected for the same reasons as Claim 11.

8. Claim 19 recites the limitation "*a mixture of primary color generated by the one or more light emitting diodes (LEDs)*" in lines 3-5. It is unclear if the claimed invention includes a multicolor light source capable of producing a mixture of primary colors, and color control means for such light source; or merely the color control means, with the multicolor light source being outside the scope of the invention (as defined by the claim), since the previously claimed light emitting diodes (LED) are never claimed as being of a plurality of colors. Claim 46 is rejected for the same reasons as claim 19.

The applicant is advised that for Prior Art rejections the Examiner assumed that claims 19 and 46 define the claimed invention as including LEDs of multiple colors.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-4, 6, 9-18, 21, 22, 24-26, 30-33, 35 and 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over BACH et al. (U.S. Pat. 6,135,621) in view of YAMASHITA et al. (U.S. Pat. 4,924,357).

10. BACH et al. discloses an illumination device having:

- **a rotatable rod (as recited in claims 1 and 31)**, Figure 4, reference number 12;
- **the rod being made of acrylic (as recited in claims 1 and 31)**, column2, lines 7-9;
- **the rod having a first end (as recited in claims 1 and 31)**, Figure 4, reference number 11;
- **the rod having a second end (as recited in claims 1 and 31)**, Figure 4, reference number 13;
- **a first circuit board (as recited in claims 1 and 31)**, as seen in Figure 4;
- **at least one light source (as recited in claims 1 and 31)**, Figure 4, reference number 14;

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- **the first circuit board including the at least one light source (as recited in claims 1 and 31), as seen in Figure 4;**
- **a first end housing (as recited in claims 1 and 31), Figure 4, reference number 24;**
- **the first end housing having a first opening (as recited in claims 1 and 31), as seen in Figure 4;**
- **the first end of the acrylic rod being inserted through the first opening (as recited in claims 1 and 31), column 2, lines 31-35;**
- **the acrylic rod being rotatable within the first end housing (as recited in claims 1 and 31), as evidenced by Figure 4;**
- **the first end housing being used to house the first circuit board (as recited in claims 1 and 31), column 2, lines 31-35;**
- **the first end housing being used to align the light source with the first opening and the first end of the acrylic rod (as recited in claims 1 and 31), as seen in Figure 4;**
- **the rod being clear (as recited in claims 2 and 32), column 2, lines 9 and 10;**
- **the rod being cylindrical (as recited in claim 3 and 33), column 2, lines 7-9;**
- **a second circuit board (as recited in claims 4 and 31), as seen in Figure 4;**

- **the second circuit board including the at least one light source (as recited in claims 4 and 31), Figure 4, reference number 32;**
- **a second end housing (as recited in claims 4 and 31), Figure 4, reference number 24;**
- **the second end housing having a second opening (as recited in claims 4 and 31), as seen in Figure 4;**
- **the second end of the rod being inserted through the second opening (as recited in claims 4 and 31), column 2, lines 31-35;**
- **the rod being rotatable within the second end housing (as recited in claims 4 and 31), as evidenced by Figure 4;**
- **the second end housing being used to house the second circuit board (as recited in claims 4 and 31), column 2, 31-35;**
- **the second end housing being used to align the light source with the first opening and the first end of the acrylic rod (as recited in claims 4 and 31), as seen in Figure 4;**
- **the light source being an incoherent light source (as recite in claims 6 and 35), as evidenced by Figure 4;**
- **a first reflector (as recited in claims 9 and 38), Figure 4, reference number 18;**
- **the first reflector being coupled to the first circuit board (as recited in claims 9 and 38), column 2, lines 15-20;**

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- **the first reflector being disposed around the light source at a first end (as recited in claims 9 and 38), column 2, lines 15-20;**
- **a second end of the first reflector being aligned with the first opening (as recited in claims 9 and 38), as seen in Figure 4;**
- **the second end of the first reflector receiving the first end of the acrylic rod (as recited in claims 9 and 38), as seen in Figure 4;**
- **the first reflector reflecting photons into the acrylic rod (as recited in claims 9 and 38), column 2, lines 15-20;**
- **the photons being coupled into the rotatable acrylic rod without the use of a fragile glass bulb or filament (as recited in claims 14 and 43), column 2, lines 40-45;**
- **the illumination device being mounted a surface (as recited in Claim 16), column 2, lines 37 and 38;**
- **the device being for illuminating an area (as recited in Claim 16), inherent;**
- **a light source controller (as recited in claims 17 and 44), inherent;**
- **the controller being coupled to the first circuit board to control the light sources (as recited in claims 17 and 44), inherent;**
- **an on/off switch (as recited in claims 17 and 44), inherent;**

- **the switch being used to switch the generation of photons by the light sources on and off (as recited in claims 17 and 44), inherent;**
- **an intensity selection switch (as recited in claims 18 and 45), column 1, lines 44-46; and**
- **the selection switch being for varying the brightness of the generated light (as recited in claims 18 and 45), column 1, lines 44-46.**

11. BACH et al. discloses all the limitations of the claims, except:

- the rotatable rod being rotated to change the direction of the emitted light (as recited in claims 1 and 31);
- the light source being one or more light emitting diodes (as recited in claims 1 and 31);
- the optical axis of the one or more light sources being substantially parallel with the central axis of the rotatable acrylic rod (as recited in claims 1 and 31);
- a reflective strip (as recited in claims 10 and 39);
- the reflective strip being coupled down the length of the rod (as recited in claims 10 and 39);
- the reflective strip being for reflecting photons out of the rod (as recited in claims 10 and 39);

- the reflective strip covering 108° of the diameter of the rod (as recited in claims 11 and 40);
- the reflective strip covering 90° of the diameter of the rod (as recited in claims 12 and 41);
- the reflective strip covering 45° of the diameter of the rod (as recited in claims 13 and 42); and
- the device being mounted to a light rack for illuminating equipment (as recited in Claim 15).

12. YAMASHITA et al. discloses an illumination device having:

- **a rotatable rod (as recited in claims 1 and 31), Figure 3, reference number 22;**
- **the rod being made of acrylic (as recited in claims 1 and 31), column 3, lines 56-61; .**
- **the rod having a first and a second end (as recited in claims 1 and 31), as seen in Figure 3;**
- **at least one light source (as recited in claims 1 and 31), Figure 1, reference number 44;**
- **a first end housing (as recited in claims 1 and 31), Figure 1, reference number 14L;**
- **a second end housing (as recited in claims 1 and 31), Figure 1, reference number 14R;**

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- **the first end housing having a first opening (as recited in claims 1 and 31), Figure 1, reference number 16L;**
- **the second end housing having a second opening (as recited in claims 1 and 31), Figure 1, reference number 16R;**
- **the first end of the acrylic rod being inserted through the first opening (as recited in claims 1 and 31), as seen in Figure 1;**
- **the second end of the acrylic rod being inserted through the second opening (as recited in claims 1 and 31), as seen in Figure 1;**
- **the acrylic rod being rotatable within the first and second end housings (as recited in claims 1 and 31), as evidenced by column 3, lines 39 and 40;**
- **the rod being clear (as recited in claims 2 and 32), as evidenced by column 3, lines 56-58;**
- **the rod being cylindrical (as recited in claim 3 and 33), as seen in figures 4A-4E;**
- **a reflector (as recited in claims 9 and 38), Figure 5, reference number 38;**
- **the reflector being disposed around the light source at a first end (as recited in claims 9 and 38), as seen in figure 5;**
- **the reflector reflecting photons into the acrylic rod (as recited in claims 9 and 38), column 7, lines 4-7;**

- **the illumination device being mounted a surface (as recited in Claim 16), as seen in Figure 1;**
- **the device being for illuminating an area (as recited in Claim 16), inherent;**
- **a light source controller (as recited in claims 17 and 44), inherent;**
- **an on/off switch (as recited in claims 17 and 44), inherent;**
- **the switch being used to switch the generation of photons by the light sources on and off (as recited in claims 17 and 44), inherent;**
- **the rotatable rod being rotated to change the direction of the emitted light (as recited in claims 1 and 31), column 7, lines 18-20;**
- **the optical axis of the one or more light sources being substantially parallel with the central axis of the rotatable acrylic rod (as recited in claims 1 and 31), as evidenced by Figure 1;**
- **a reflective strip (as recited in claims 10 and 39), figures 4A-4E, reference number 30;**
- **the reflective strip being coupled down the length of the rod (as recited in claims 10 and 39), as seen in figures 4A and 4B;**

- **the reflective strip being for reflecting photons out of the rod
(as recited in claims 10 and 39), column 6, lines 37-46.**

13. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the teachings of BACH et al. and YAMASHITA et al. to obtain an illumination device capable of providing support and aimable illumination in stairwells and vehicles, and other interior/exterior applications, as per the teachings of both BACH et al. (column 1, lines 5-23) and YAMASHITA et al. (column 7, lines 18-20).

14. Regarding the light source being one or more light emitting diodes (as recited in claims 1 and 31), the examiner takes Official Notice that the use of LEDs is old and well known in the illumination art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute an LED for the light source in the system of BACH et al. and YAMASHITA et al.. One would have been motivated since LEDs are recognized in the illumination art to have many desirable advantages, including reduced size, high efficiency, low power consumption, long life, resistance to vibrations, and low heat production, over other light sources. In addition, one of ordinary skill in the art at the time the invention was made would have recognized that LED are incoherent light sources.

15. Regarding the reflective strip covering 108° (as recited in claims 11 and 40), 90° (as recited in claims 12 and 41), or 45° (as recited in claims 13 and 42) of the diameter of the rod, the applicant is advised that it would have been obvious to one of ordinary

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skill in the art at the time the invention was made to select such values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In this case, selecting a specific value for the coverage of the reflector around the rotatable acrylic rod would have flown naturally to one of ordinary skill in the art as necessitated by the requirements of a particular application.

16. Method claims 21, 22, 24-26 and 30 were considered inherently disclosed, by the individual teachings of BACH et al. and YAMASHITA et al., or suggested when such teachings are combined.

17. Claims 19, 20, 23, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over BACH et al. (U.S. Pat. 6,135,621) in view of YAMASHITA et al. (U.S. Pat. 4,924,357) as applied to claims 1, 17, 21, 31, 44 and 45 above, further in view of STINSON (U.S. Pat. 4,992,704).

18. The teachings of BACH et al. and YAMASHITA et al. disclose individually, or suggest when combined, all the limitations of the claims, except:

- the light source being a multi-color light emitting diode (as implied by claims 19 and 46);
- the multi-color light emitting diode being capable of producing a mixture of primary colors (as implied by claims 19 and 46);

- a color selection switch (as recited in claims 19 and 46);
- the color selection switch being for selectively choosing the mixture of primary colors generated by the light emitting diode to vary the color of the generated light (as recited in claims 19);
- a transformer (as recited in claims 20 and 47);
- the transformer being for transforming AC power to a safe efficient power to power the electrical-to-optical converters of the first circuit board in an efficient manner (as recited in claims 20 and 47).

19. STINSON discloses an illumination device having:

- **a multi color electrical-to-optical converters (as implied by claims 19 and 46), Figure 1, reference number 10;**
- **the multicolor electrical-to-optical converters being capable of producing a mixture of primary colors (as implied by claims 19 and 46), column 2, lines 4-10;**
- **the multi color electrical-to-optical converter being an LED, column 2, lines 49-51;**
- **a color selection switch (as recited in claims 19 and 46), inherent;**
- **the color selection switch being for selectively choosing the mixture of primary colors generated by the electrical-to-optical converters to vary the color of the generated light (as recited in claims 19), columns 2 and 3, lines 65-68 and 1-4, respectively;**

- **a transformer (as recited in claims 20 and 47), Figure 2, reference number 30;**
- **the transformer being for transforming AC power to a safe efficient power to power the electrical-to-optical converters of the first circuit board in an efficient manner (as recited in claims 20 and 47), column 3, lines 43-47.**

20. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the light emitting diode and control circuit of STINSON in the illumination device of BACH et al. and YAMASHITA et al., to provide such device with variable color illumination, as per the teachings of STINSON (see column 2, lines 4-10).

21. Method claim 23 was considered inherently disclosed by the combined teachings of BACH et al. and STINSON.

Allowable Subject Matter

22. Claims 7, 8, 36, 37 and 48-51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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23. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches an illumination device having an acrylic rod rotatably received at the ends by an end housing. The end housing includes a light source for injecting light into the end of the rod. The diameter or length of the acrylic rod is proportional to a desired frequency of light.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically the diameter or length of the acrylic rod being proportional to a desired frequency of light, in combination with the claimed illumination device.

Response to Arguments

24. Applicant's arguments filed June 1, 2005 with respect to claims 1-4, 6-26, 30-33 and 35-51 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

26. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached at (571) 272-2378. The facsimile machine number for the Art Group is (703) 872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications maybe obtained from either Private PAIR or Public PAIR. Status

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Inr

August 10, 2005


THOMAS M. SEMBLER
PRIMARY EXAMINER